

## REMARKS/ARGUMENTS

Pending claims 6-11 stand rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 6,317,869 (Adl-Tabatabai). Applicants respectfully traverse the rejection. As to claim 6, the reference fails to teach that a bit value is shifted into a first significant bit of a register and all bits of the register are shifted in a first direction. This is so for at least several reasons. First, the reference teaches presence of a bit vector, where each bit of the vector is for a corresponding variable. Thus each bit of the bit vector is dedicated to a given variable. In contrast, claim 6 recites that when a reference operand is created, a given bit value is shifted into a single location of a register, namely the first significant bit, regardless of what reference operand is created. Thus in claim 6 every time a reference operand is created, a given bit value is shifted into the first significant bit of a register. In contrast, the reference does not shift a value into this location when almost all operands are created. Still further, the reference fails to teach that all bits of the register are shifted in a first direction in conjunction with creation of a reference operand. Instead, the reference simply teaches that only a given bit (i.e., only one bit) is set or cleared. Adl-Tabatabai, column 6, lines 27-35. Accordingly, claim 6 and the claims depending therefrom are patentable over the cited art.

Pending claims 1-5 and 12-20 stand rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,651,159 (Ramesh). Applicants respectfully traverse the rejection. As to claim 1, Ramesh fails to teach that a stack pointer is updated by movement of the stack pointer, where the stack pointer is stored in a tag stack and is implicitly encoded. First, Ramesh fails to teach that a stack pointer be stored in a tag stack. Instead, Ramesh teaches that a top of stack (TOS) pointer is separate from data stored in a register stack.

Further, nothing in the reference anywhere teaches that a stack pointer be moved to recognize addition of an operand tag to the tag stack. In this regard, it appears that the Office Action contends that a pseudo-tag register is the recited tag stack. However, all that this register does is provide a bit for each of paired registers in a register stack, where each bit denotes whether a corresponding data register is empty or not and is to be used to detect stack over flow and under flow exceptions. Ramesh, 4:57-65. Nonetheless, this has nothing to do with the recited subject matter of updating a stack pointer to recognize an addition of a bit (e.g., to this pseudo-tag register). Still further, nothing in the reference anywhere teaches or suggests that a stack pointer be implicitly encoded as set forth in claim 1, nor where a bit position of the stack

pointer indicate a depth of a tag stack. Instead, the TOS pointer of Ramesh simply identifies a next register of a register stack to be read or written. Accordingly, claim 1 and the claims depending therefrom are patentable over the cited art.

For at least the same reasons independent claims 12 and 17 and the claims depending therefrom are patentable over the cited art. Still further regarding claim 12, Ramesh fails to anywhere teach or suggest the recited operand tag that indicates a type of operand (either reference or non-reference type) added to an operand stack. Still further, nothing in the reference anywhere teaches adding this operand tag to a first order position of a tag stack. In addition, the reference is silent with regard to any shifting, and certainly teaches nothing with regard to the recited shifting of a previous value stored in the positions of the tag stack in a first direction. Accordingly, claim 12 and 17 and their dependent claims are patentable over the cited art.

The application is believed to be in condition for allowance and the Examiner's prompt action in accordance therewith is respectfully requested. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-1504.

Respectfully submitted,

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